A MIGRATION FLIGHT OF PURPLE MARTINS IN MICHIGAN IN THE SUMMER OF 1905.

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In the Bulletin of the Michigan Ornithological Club, Vol. V. (pp. 77-78), the writer described an extensive flight of Sparrow Hawks which took place August 30th, 1904, at Macatawa, Mich., a summer resort located on the east shore of Lake Michigan, southwest from Grand Rapids. More than a thousand hawks passed the point of observation within a period of about seven hours. They were flying southward along the lake shore, while a moderately strong wind was blowing from the northeast, and had been blowing from a similar direction during the preceding day and night. Unfortunately no effort was made to determine whether similar numbers of hawks were passing over the territory farther inland, and so there was merely an assumption that a concentrated stream of these birds was passing along the shore, and that this concentration was due to the flight of the hawks with the wind until they reached the shore, which they then followed in preference to continuing their original direction, which would have taken them over the lake.

On August 15, 1905, at the same locality, the writer had an opportunity to watch an extensive flight of Purple Martins. Again a moderately strong wind was blowing from the northeast, which direction it had held during the previous night. Actual counts of the numbers of individuals passing south, at various intervals between 9 a. m. and 12:30 p. m., gave an average of thirty-two per minute. As the whole width of the bird stream was too great to be under observation at one time, there must have been more than ten thousand individuals which passed the point of observation on that day.

On this occasion it was determined to ascertain whether or not the great numbers were limited to a narrow area along the lake shore. Advantage was taken of an interurban car going to Holland, which is about six miles inland, and there observations were made for comparison. Between 11:03 and 11:30

a. m. only four Purple Martins were seen flying about town, where they had previously been common. The contrast in numbers was greater than had been anticipated. At noon on the return to Macatawa the Martin flight was found to be still under full headway as shown by the count of 92 birds between 11:59 and 12:02 and of 237 between 12:12 and 12:17½. The area over which the Martins were abundant was found to extend scarcely one-fourth of a mile inland.

The wind changed but little during the day and following night, and the next morning many new arrivals among the Warblers and Flycatchers were seen. They formed the first Warbler "wave" of the fall migration.

These observations are readily explicable on the assumption that the direction of the flight of the birds corresponded with that of the wind, while they seem to give no support to the "beam-wind" theory. It seems probable that a series of careful observations by persons living on the shores of Lake Michigan, and on those of other large inland bodies of water with north and south shore lines, might lead to a more satisfactory knowledge of the relations existing between the direction of the wind and that of the flight of migrating birds in general.

The temperature records made at Grand Rapids and other points in Southern Michigan during the 14th, 15th and 16th of August, 1905, show almost no change of temperature, and so apparently eliminate that factor from the problem of determining what agencies were most involved in initiating the particular migration flight just described. It is not often that the change to a favoring wind is unaccompanied by changes of temperature, but here was an opportunity to observe the results following a change in the wind without the complication of accompanying temperature changes.

The barometer was rising at the time of the flight, and continued to do so during the day and following night. During the spring, extensive migration movements more commonly take place at the time of a falling barometer. In the autumn they usually occur with a rising barometer rather than with a falling one. Hence neither a rising nor a falling barometer

would seem to furnish the stimulus directly concerned in initiating such movements.

As to the question of food supply, it is hardly probable that a scarcity would have arisen so early in the season.

A consideration of all these various factors of wind direction, temperature change, barometric pressure, and food supply, in connection with the migration movements described above, leads quite clearly to the conclusion that the favoring wind may be considered as the most potent in bringing about the movements. When the breeding season is over, and a general physiological condition of readiness for flight is attained, then the favoring wind may furnish the necessary stimulus for a migration flight.

ON MAKING THE ACQUAINTANCE OF INDIVIDUAL BIRDS.

BY W. E. SAUNDERS.

Our study of birds is almost invariably based upon experiences with individuals which are grouped together and summarized into a total which we entitle "Our observations upon the species of so-and-so." This method is adopted because of the almost insuperable difficulties in the way of the adoption of any other course, and it has become so much the habit that we hardly ever stop to regret that we cannot differentiate between individuals and thereby determine individual preferences, habits, and vagaries. How much we lose by this, both in the sum total of knowledge gained and in our enjoyment of the individual acquaintance which we might make were the circumstances otherwise, it would be hard to say, but that there is a loss can not be doubted, and any occurrences which prove the possibility and emphasize the value of individual acquaintance will, I hope, be useful.

Years ago, a strong hint, and one of the first, was given to me, by a heronry in which some sets of eggs were unspotted, while others were more or less heavily spotted with deep